

Claims

1. A cellular receiver device for receiving data from a data source, said cellular receiver device comprising:

cellular receiving means for enabling receipt of said data from a cellular network domain; and

radio broadcast access means for providing conditional access to a digital radio broadcast data channel to enable receipt of said data via said digital radio broadcast data channel.

2. A receiver device according to claim 1, wherein said radio broadcast access means comprises at least one of a ciphering function and an access function for realizing said conditional access.

3. A receiver device according to claim 2, wherein said at least one of said ciphering and said access function is based on security parameters.

4. A receiver device according claim 1, wherein said radio broadcast access means are configured to receive message objects belonging to a predetermined application identification which indicates said data.

5. A receiver device according to claim 4, wherein said radio broadcast access means are configured to extract an unencrypted mobile subscriber identity from a received message object and to compare it with a mobile subscriber identity of said radio broadcast access means.

6. A receiver device according to claim 5, wherein said radio broadcast access means are configured to extract and decrypt said received message object in response to a comparison result.

7. A receiver device according to claim 6, wherein decryption of said received message is based on latest valid security parameters allocated to said mobile subscriber identity.

8. A receiver device according to claim 7, wherein said security parameters comprise at least one of a temporary ciphering key and a temporary identity.

9. A receiver device claim 4, wherein said radio broadcast access means are configured to discard said received message object if said message object has already been received by said cellular receiving means.

10. A receiver device according to claim 4, wherein said message object is one of a Short Message Service message and a Multimedia Message Service message.

11. A receiver device according to claim 1, wherein said digital radio broadcast channel comprising one of a channel of a Digital Radio Mondiale system and a Digital Audio Broadcast system.

12. A receiver device according to claim 3, further comprising client means for setting up a connection to a server means via said cellular network domain so as to obtain new security parameters.

13. A receiver device according to claim 12, wherein said client means is configured to perform a setup each time a predetermined lifetime has elapsed.

14. A receiver device according to claim 12, wherein said client means comprises a SyncML client.

15. A receiver device according to claim 12, further comprising register means for storing said obtained security parameters.

16. A receiver device according to claim 12, wherein said client means are configured to use initial security parameters for authentication during a connection setup.

17. A receiver device according to claim 12, wherein said client means are configured to retry connection attempts at regular time intervals, if a previous connection setup has failed.

18. A receiver device according to claim 12, wherein said client means are configured to delete said stored security parameters after a predetermined lifetime without successful connection attempts has passed.

19. A receiver device according to claim 1, wherein said radio broadcast access means comprise service client means for enabling access to at least one of IP services and email services via said radio broadcast data channel.

20. A server device for providing a data service to a mobile device, said server device comprising:

gateway means for receiving data from an external data source and for mapping a destination address of received data to a mobile subscriber identity; and

adding means for adding said mobile subscriber identity to said received data, and for putting said received data with said mobile subscriber identity to a data stream to be broadcast via a digital radio broadcast channel.

21. A server device according to claim 20, further comprising queuing means for queuing said data stream with said received data in chronological order.

22. A server device according to claim 20, wherein said gateway means is configured to encrypt said received data using security parameters.

23. A server device according to claim 20, wherein said server device is configured to assign said mobile subscriber identity to a mobile device in response to a registration request.

24. A server device according to claim 23, wherein said server device is configured to assign a public user address in response to said registration request.

25. A server device according to claim 24, wherein said public user address comprises one of an IP address and an email address.

26. A server device according to claim 24, further comprising storing means for storing a table linking an assigned public user address to said assigned mobile subscriber identity.

27. A server device according to claim 21, further comprising deleting means for deleting said received data from a queued data stream in response to receipt of a recall request.

28. A server device according to claim 20, wherein said received data comprise an email content, wherein said adding means is configured to encapsulate said received email content into a radio broadcast packet, and wherein a message identity is added to a header of said radio broadcast packet.

29. A server device according to claim 20, wherein said received data comprise an IP packet, wherein said adding means is configured to encapsulate said received IP packet into a radio broadcast packet, and wherein a message identity is added to a header of said radio broadcast packet.

30. A server device according to claim 28, wherein said message identity is derived from a temporary mobile subscriber identity.

31. A server device according to claim 20, wherein said gateway means are configured to reject said received data, if a predetermined maximum data size is exceeded.

32. A server device according to claim 20, further comprising firewall means for filtering said received data so as to adhere to predetermined subscription parameters.

33. A server device according to claim 20, further comprising security server means for enabling exchange of security parameters with a mobile device.

34. A server device according to claim 33, wherein said parameter exchange is based on a SyncML protocol.

35. A server device according to claim 33, wherein said security parameters comprise at least one of a mobile subscriber identity and a ciphering key.

36. A server device according to claim 33, further comprising a security database for storing security parameters.

37. A server device according to claim 36, wherein said stored security parameters comprise initial security parameters and temporary security parameters.

38. A server device according to claim 37, wherein authentication for connection setup to said security server means is based on said initial security parameters.

39. A server device according to claim 37, wherein said security server means is configured to generate and store new temporary security parameters in response to a successful connection setup by said mobile device.

40. A server device according to claim 36, wherein said security server means is configured to delete said stored security parameters if a predetermined lifetime without successful connection setup has passed.

41. A gateway device for providing a connection between a cellular network and a digital radio broadcast domain, said gateway device being configured to encrypt data received from said cellular network to be forwarded to a mobile device, and to forward said encrypted data to said digital radio broadcast domain based on a conditional access scheme.

42. A gateway device according to claim 41, wherein said conditional access scheme defines a predetermined offline time during which said mobile device has not been in a coverage area of said cellular network, and wherein data forwarding is started after expiry of said offline time.

43. A gateway device according to claim 41, wherein said gateway device is configured to trigger a recall request towards said digital radio broadcast domain if it is detected that said mobile device is in a coverage area of said cellular network.

44. A gateway device according to claim 43, wherein said gateway device is configured to detect, based on a subscriber database query, whether said mobile device is in the coverage area.

45. A system for providing data services to mobile devices via a radio broadcast channel, said system comprising:

a cellular receiver device for receiving data from a data source, said cellular receiving device comprising cellular receiving means for enabling receipt of said data from a cellular network domain, and radio broadcast access means for

providing conditional access to a digital radio broadcast data channel to enable receipt of said data via said digital radio broadcast data channel;

a server device for providing a data service to a mobile device, said server device comprising gateway means for receiving data from an external data source and for mapping a destination address of received data to a mobile subscriber identity, and adding means for adding said mobile subscriber identity to said received data, and for putting said received data with said mobile subscriber identity to a data stream to be broadcast via a digital radio broadcast channel; and

a gateway device for providing a connection between a cellular network and a digital radio broadcast domain, said gateway device being configured to encrypt data received from said cellular network to be forwarded to a mobile device, and to forward said encrypted data to said digital radio broadcast domain based on a conditional access scheme.

46. A method of transmitting data to a mobile device, said method comprising the steps of:

encrypting data to be forwarded; and

forwarding said data to a digital radio broadcast domain based on a conditional access scheme.

47. A method according to claim 46, wherein said conditional access scheme defines a predetermined offline time during which said mobile device has not been in the coverage area of a cellular network, wherein said data forwarding is started after expiry of said offline time.

48. A method of receiving data at a mobile device, said method comprising the step of:

providing a conditional access to a digital radio broadcast data channel to enable receipt of said data via said digital radio broadcast data channel; and

receiving said data.

49. A method according to claim 48, wherein said conditional access is provided by at least one of a ciphering function and an access function.

50. A computer program embodied on a computer readable medium, said computer program controlling one of a server device and a gateway device to perform the steps of:

encrypting data to be forwarded; and

forwarding said data to a digital radio broadcast domain based upon a conditional access scheme.

51. A computer program embodied on a computer readable medium, said computer program controlling a mobile device to transmit data by performing the steps of:

providing a conditional access to a digital radio broadcast data channel to enable receipt of said data via said digital radio broadcast data channel; and

receiving said data.